CAN OPHTHALMOKINESIS (PAVLIDIS TEST) OBJECTIVELY PROGNOSE- DIAGNOSE PRESCHOOLERS AT HIGH-RISK FOR ADHD?

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Attention-deficit/hyperactivity disorder (ADHD) is a mainly hereditary, neurological disorder, estimated to affect approximately 3% to 7% of school-age children. The diagnosis of ADHD is difficult in preschool ages and is done via questionnaires and clinical evaluation. Eye movements (EM) are among the best indices of brain processes, that is why many neurological conditions are reflected in ophthalmokinesis (eye movements). As ADHD is a neurological condition, it is also shown to be reflected in abnormal ophthalmokinesis.

This study examined whether: 1) There was a significant correlation between the EMs of preschool children (4 to 6year-olds) and ADHD symptomatology, 2) EM could be used to differentiate preschool children at high-risk for ADHD from non-ADHD, by the use of the biological test of ophthalmokinesis (Pavlidis Test). Thirty two (n=32, 24 boys 8 girls, mean age 63.3months, SD=6, min.54 max.76) preschool children participated in the study. ADHD symptomatology was evaluated by the questionnaire developed by the second author and by DSM-IV-R. The EM were automatically recorded and analysed by the OKG system developed by Pavlidis. Four EM non-verbal subtests were used, with duration of 30 sec. each. Several significant EM variables emerged, from the statistical analysis, which showed significant differences between the ADHD and the non-ADHD control group, with many variables showing p<0,000. Discriminant analysis showed that 93.1% of the children were classified correctly into their respective categories on the basis of their ophthalmokinesis.

Our easy to use, quick and biological test of ophthalmokinesis, proved very dependable, as it successfully differentiated with 93,1% accuracy ADHD from non-ADHD preschoolers. The test is non verbal, and once further validated and standardised, it could be used internationally, irrespective of language, for the screening of preschoolers for ADHD. It is of interest that in another prognostic study in Czechia, our ophthalmokinetic test accurately predicted (91,5%) at the beginning of 1st grade who would develop LD two years later. Therefore, our test of ophthalmokinesis proved to be a very accurate predictor of LD and ADHD at preschool age or at the beginning of schooling.